CIVIL-TECH CONSULTANTS AND ENGINEERS

Building & Highway Material Testing Laboratory

NABL - Accredited Laboratory as per ISO / IEC-17025 : 2005

Job No.: CTCE/BBMP/WNo.05/KRIDL/CEMENT/2014-15 Date: 28.07.2014

TEST REPORT

CLIENT	:	**Asst. Executive Engineer,** Byatarayanapura Sub Division, BBMP, Bangalore.
AGENCY	:	**Technical Manager,** KRIDL, Bangalore.
NAME OF THE WORK	:	Improvements to road and drains at Nagappa Block, Dwarakanagara in Ward No. 05, Byatarayanapura Sub Division, BBMP, Bangalore.
REFERENCE	:	AEE/Byatarayanapura/BBMP/664/2014-15 Dated: 28.07.2014
SAMPLE ID	:	CEMENT
SAMPLES SUPPLIED BY	:	AGENCY

The results of the tests conducted on the cement sample are as follows:

Sl.No	Descriptions	Test Method as per IS	Test Result	Requirements as per IS: 8112-2013
1	Standard Consistency	IS-4031 (Part -4)	30.00 %	-
2	a) Initial Setting Time	IS-4031 (Part -5)	150 Minutes	Not Less than 30 Minutes
	b) Final Setting Time	IS-4031 (Part -5)	490 Minutes	Not More than 600 Minutes
3	Soundness by the Le-Chatelier method	IS-4031 (Part 3)	1 mm	Not more than 10 mm

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ಬಿಬಿಎಂಪಿ, ಬೆಂಗಳೂರು-24

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Job No.: CTCE/BBMP/WNo.05/KRIDL/SAND/2014-15 : 28.07.2014

TEST REPORT ON FINE AGGREGATES
IS 383-1970 (RA- 2002)

Client : **Asst. Executive Engineer,** Byatarayanapura Sub Division, BBMP, Bangalore.

Agency : **Technical Manager,** KRIDL, Bangalore.

Name of Work : Improvements to road and drains at Nagappa Block, Dwarakanagara in Ward No. 05, Byatarayanapura Sub Division, BBMP, Bangalore.

Reference : AEE/Byatarayanapura/BBMP/664/2014-15 Dated: 28.07.2014

Date of Testing : 28.07.2014

Material : Sand

Total Wt. of Aggregates in gms **2000**

Is Sieve Size in mm	Weight Retained (gm)	Retained Weight in %	Cumulative Retained Weight in %	Cumulative Weight Passing in %	Spec.Limits For Zone-II
10	0	0	0	100	100
4.75	55	2.75	2.75	97.3	90-100
2.36	198	9.90	12.65	87.4	75-100
1.18	462	23.10	35.75	64.3	55-90
600 Micron	485	24.25	60.00	40.0	35-59
300 Micron	563	28.15	88.15	11.9	8-30
150 Micron	152	7.60	95.75	4.3	0-10

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Job No.: CTCE/BBMP/WNo.05/KRIDL/AGG/2014-15 : 28.07.2014

TEST REPORT ON COARSE AGGREGATES
IS 383-1970 (RA- 2002)

Client : **Asst. Executive Engineer,** Byatarayanapura Sub Division, BBMP, Bangalore.

Agency : **Technical Manager,** KRIDL, Bangalore.

Name of Work : Improvements to road and drains at Nagappa Block, Dwarakanagara in Ward No. 05, Byatarayanapura Sub Division, BBMP, Bangalore.

Reference : AEE/Byatarayanapura/BBMP/664/2014-15 Dated: 28.07.2014

Date of Testing : 28.07.2014

Material : 40mm Aggregates

Total Wt. of Aggregates in gms **25800**

Is Sieve Size in mm	Weight Retained (gm)	Retained Weight in %	Cumulative Retained Weight in %	Cumulative Weight Passing in %	Spec.Limits
80	0	0	0	100	100
40	990	3.84	3.84	96.16	95-100
20	16450	63.76	67.60	32.40	30-70
10	5200	20.16	87.75	12.25	10-35
4.75	2600	10.08	97.83	2.17	0-5

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Job No.: CTCE/BBMP/WNo.05/KRIDL/AGG/2014-15 : 28.07.2014

TEST REPORT ON COARSE AGGREGATES
IS 383-1970 (RA- 2002)

Client : **Asst. Executive Engineer,** Byatarayanapura Sub Division, BBMP, Bangalore.

Agency : **Technical Manager,** KRIDL, Bangalore.

Name of Work : Improvements to road and drains at Nagappa Block, Dwarakanagara in Ward No. 05, Byatarayanapura Sub Division, BBMP, Bangalore.

Reference : AEE/Byatarayanapura/BBMP/664/2014-15 Dated: 28.07.2014

Date of Testing : 28.07.2014

Material : 20mm Aggregates

Total Wt. of Aggregates in gms= **5000**

Tabel - 1

Is Sieve Size in mm	Weight Retained (gm)	Retained Weight in %	Cumulative Retained Weight in %	Cumulative Weight Passing in %	Spec.Limits
40	0	0	0	100	100
20	140	2.80	2.8	97.20	95-100
10	3200	64.00	66.8	33.20	25-55
4.75	1250	25.00	91.8	8.20	0-10

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Building & Highway Material Testing Laboratory

NABL - Accredited Laboratory as per ISO / IEC-17025 : 2005

Job No.: CTCE/BBMP/WNo.05/KRIDL/STEEL/2014-15 28.07.2014

TEST REPORT ON REINFORCEMENT STEEL

Client	:	**Asst. Executive Engineer,** Byatarayanapura Sub Division, BBMP, Bangalore.
Agency	:	**Technical Manager,** KRIDL, Bangalore.
Name of the work	:	Improvements to road and drains at Nagappa Block, Dwarakanagara in Ward No. 05, Byatarayanapura Sub Division, BBMP, Bangalore.
Reference	:	AEE/Byatarayanapura/BBMP/664/2014-15 Dated: 28.07.2014
Date of Test	:	28.07.2014
Technical Reference	:	IS: 1786-2008

Sl. No	Nominal size (dia) (mm)	Mass per metre (Kg/mtr)	TENSILE STRENGTH			Bend Test	Rebend Test
			0.20% proof stress/Yield stress N/mm²	Tensile strength (Ultimate stress) N/mm²	Elongation percent gauge length		
1	12	0.89	515	558	13.30	O.K	O.K

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Job No.: CTCE/BBMP/WNo.05/KRIDL/CUBE/2014-15 29.08.2014

TEST REPORT ON CONCRETE CUBES

Client	: **Asst. Executive Engineer,** Byatarayanapura Sub Division, BBMP, Bangalore.
Agency	: **Technical Manager,** KRIDL, Bangalore.
Name of the work	: Improvements to road and drains at Nagappa Block, Dwarakanagara in Ward No. 05, Byatarayanapura Sub Division, BBMP, Bangalore.
Reference	: AEE/Byatarayanapura/BBMP/664/2014-15 Dated: 28.07.2014
Sample ID	: Drain Slab Concrete
Size of cubes	: 150mmx150mmx150mm
Cross Sectional Area	: 22500 mm^2
Technical Reference	: IS: 516-1959 (Reaffirmed 2008)
Grade of Concrete	: M_{20}
Compressive Strength as on	:28th day

Sl.No.	Date of casting	Date of testing	Weight of cube (Kg)	Failure load (KN)	Compressive strength (N/mm^2)
1	01.08.2014	29.08.2014	8.136	478.2	21.25
2	01.08.2014	29.08.2014	8.226	485.6	21.58
3	01.08.2014	29.08.2014	8.367	512.6	22.7

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Job No.: CTCE/BBMP/WNo.05/KRIDL/CUBE/2014-15

26.08.2014

TEST REPORT ON CONCRETE CUBES

Client	: **Asst. Executive Engineer,** Byatarayanapura Sub Division, BBMP, Bangalore.
Agency	: **Technical Manager,** KRIDL, Bangalore
Name of the work	: Improvements to road and drains at Nagappa Block, Dwarakanagara in Ward No. 05, Byatarayanapura Sub Division, BBMP, Bangalore.
Reference	: AEE/Byatarayanapura/BBMP/664/2014-15 Dated: 28.07.2014
Sample ID	: Drain Concrete
Size of cubes	: 150mmx150mmx150mm
Cross Sectional Area	: 22500 mm^2
Technical Reference	: IS: 516-1959 (Reaffirmed 2008)
Grade of Concrete	: M_{20}
Compressive Strength as on	: 28^{th} day

Sl.No.	Date of casting	Date of testing	Weight of cube (Kg)	Failure load (KN)	Compressive strength (N/mm^2)
1	29.07.2014	26.08.2014	8.195	492.3	21.88
2	29.07.2014	26.08.2014	8.230	497.6	22.12
3	29.07.2014	26.08.2014	8.278	515.5	22.91

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Job No.: CTCE/BBMP/WNo.05/KRIDL/WMM/Gradation/2014-15 08.08.2014

GRADATION FOR WMM
MORTH TABLE-400-11

Client : **Asst. Executive Engineer,** Byatarayanapura Sub Division, BBMP, Bangalore.

Agency : **Technical Manager,** KRIDL, Bangalore.

Name of Work : Improvements to road and drains at Nagappa Block, Dwarakanagara in Ward No. 05, Byatarayanapura Sub Division, BBMP, Bangalore.

Reference : AEE/Byatarayanapura/BBMP/664/2014-15 Dated: 28.07.2014

Date of Testing : 08.08.2014

Material : WMM

Sample Location : WMM Mix Plant Oven Dry Wt (gm): 25230

Is Sieve Size in mm	Weight Retained (gm)	Cumulative Weight Retained (gm)	Cumulative % of Retained	Cumulative % of Passing	Spec.Limits
53	0	0	0	100	100
45	869	869	3.4	96.6	95-100
22.4	6316	7185	28.5	71.5	60-80
11.2	5457	12642	50.1	49.9	40-60
4.75	4272	16914	67.0	33.0	25-40
2.36	3698	20612	81.7	18.3	15-30
0.600	2387	22999	91.2	8.8	8-22
0.075	1946	24945	98.9	1.1	0-8

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Job No.: CTCE/BBMP/WNo.05/KRIDL/SDBC/Bitumen/2014-15 13.08.2014

BITUMEN CONTENT AND GRADATION DETERMINATION OF SEMI DENSE BITUMINOUS CONCRETE MIX
AASHTO T 164 & AASHTO T 30

CLIENT	**Asst. Executive Engineer,** Byatarayanapura Sub Division, BBMP, Bangalore.
AGENCY	**Technical Manager,** KRIDL, Bangalore.
NAME OF THE WORK	Improvements to road and drains at Nagappa Block, Dwarakanagara in Ward No. 05, Byatarayanapura Sub Division, BBMP, Bangalore.
REFERENCE	AEE/Byatarayanapura/BBMP/664/2014-15 Dated: 28.07.2014
SAMPLE I/D	Roads at Nagappa Block, Dwarakanagara in Ward No. 05
DATE OF TESTING	13.08.2014

BITUMEN CONTENT DETERMINATION

Description	Trail 1	Trail 2
1. Weight of Mixture before Test, g	500	500
2. Weight of Mixture after Test, g	475.5	476
3. Weight of Asphalt and Mineral matter Extracted,	-	-
4. Weight of Mineral Matter, g.	-	-
5. Weight of Ash, g		
6. Weight of Bitumen Extracted, g. (corrected)	24.5	24.00
7. Bitumen content in %	4.90	4.80
8. Average	4.85	

GRADATION AFTER EXTRACTION

SIEVE SIZE	Trail 1				JOBMIX
mm	Weight Retained, gm	% Retained	%Cummulative Retained	% Passing	Gradation
13.2	0	0	0	100	100
9.5	26.13	5.50	5.50	94.50	90-100
4.75	242.25	50.95	56.44	43.56	35-51
2.36	49.46	10.40	66.84	33.16	24-39
1.18	44.38	9.33	76.18	23.82	15-30
0.3	51.79	10.89	87.07	12.93	9-19
0.075	40.42	8.50	95.57	4.43	3-8

SIEVE SIZE	Trail 2				JOBMIX
mm	Weight Retained, gm	% Retained	%Cummulative Retained	% Passing	Gradation
13.2	0	0	0	100	100
9.5	25.69	5.14	5.14	94.86	90-100
4.75	239.87	47.97	53.11	46.89	35-51
2.36	99.65	19.93	73.04	26.96	24-39
1.18	45.24	9.05	82.09	17.91	15-30
0.3	25.49	5.10	87.19	12.81	9-19
0.075	35.16	7.03	94.22	5.78	3-8

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